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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,754	05/10/2002	Thomas Francis McNulty	RD-29414	1569

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EXAMINER	
BLACKWELL RUDASIL, GWENDOLYN A	
ART UNIT	PAPER NUMBER

1775

DATE MAILED: 02/10/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-4

Office Action Summary

Applicati n No.

10/063,754

Applicant(s)

MCNULTY ET AL.

Examiner

Gwendolyn A. Blackwell-Rudasill

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____ .
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) 28-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____ .
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 . 6) ☐ Other: ____ .

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-27, drawn to a fused quartz article with a coating, classified in class 428, subclass 432.
 - II. Claims 28-56, drawn to a method of making, classified in class 427, subclass 372.2.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of Group II and Group I are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a materially different process. Instead of coating the layer to make the cristobalite layer, the cristobalite layer can be grown from the fused quartz body through the use of nuclei promoter found near the surface of the fused body. Subsequent heating will cause a cristobalite layer to be formed at the surface.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Robert Santandrea on January 16, 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-27. Affirmation of this election must be made by applicant in replying to this Office action. Claims

Art Unit: 1775

28-56 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

6. Claims 7, 15, and 24 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 7 depends from claim 6, claim 15 depends from claim 14, and claim 24 depends from claim 23. The objected to claims are improperly dependent from the parent claim in that they do not further limit the scope of the parent claim. The objected claims broaden the scope of the parent claim, which is impermissible.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1775

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3-5, 9-12, and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent no. 5,976,247, Hansen et al.

Hansen et al disclose a crucible, used in a Czochralski process, having an inner surface and an outer surface, (columns 2-3, lines 55-5). A substantially uniform and continuous cristobalite coating is formed on the surface of the crucible. The coated crucible can be used to temperatures up to about 2000°K (1727°C), (column 3, lines 37-56). The inner and outer coatings contain devitrification promoters such as alkaline earth metal cations and the lanthanides. The concentration of the alkaline earth metals, applied to the inner surface of the crucible, should not exceed about 50 mM per thousand square centimeters of the surface to be coated, meeting the requirements of claims 1, 3, 5, 9-12, and 17-18, (columns 5-6, lines 8-16).

Because Hansen et al disclose that metal cations can be added to promote cristobalite formation, the claimed physical property of the article being chemically inert to halide gases and acids would be inherently present in the prior art. A chemical composition and its properties are inseparable. *MPEP 2112.02*. Absent a showing to the contrary that applicant's claimed invention provides unexpected results over the prior art, the addition of the claimed physical property to claim 4 fails to provide patentable distinction over the prior art.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 1775

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 2, 6-8, 13-16, and 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent no. 5,976,247, Hansen et al as applied to claims 1 and 12 above, in view of United States Patent no. 4,102,666, Baumler et al, further in view of United States Patent no. 4,072,489, Loxley et al.

Hansen et al disclose the limitations of claims 1 and 12 above. In addition the crucible is made from vitreous silica, abstract. Hansen et al do not disclose that the crucible is transparent or the thickness of the coating.

Baumler et al disclose a quartz glass element used in the production of semiconductor elements with an outer coating of cristobalite, (abstract), that can be used at high temperatures, (columns 3-4, lines 43-48). The thickness of the coatings is preferably less than 1% of the thickness of the wall of the quartz-glass element, (column 5, lines 2-36). In addition, calcium can be used as a crystallization promoter, (column 7, lines).

Loxley et al disclose that crucibles used in growing silicon crystals can be transparent, (columns 4-5, lines 62-8).

Art Unit: 1775

Hansen et al, Baumler et al, and Loxley et al relate to inventions used in making semiconductor elements. Loxley et al is used to show that it is commonly known in the art that crucibles when made from high purity quartz can be made transparent. Baumler et al demonstrate that the thickness of the coating is relative to the thickness of the quartz glass element.

As such, absent a showing of criticality with respect to thickness (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the thickness through routine experimentation in order to achieve varying degrees of protection for the crucible. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn A. Blackwell-Rudasill whose telephone number is (703) 305-9741. The examiner can normally be reached on Monday - Thursday; 6:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Art Unit: 1775

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Gwendolyn A. Blackwell-Rudasill

Examiner

Art Unit 1775

gbr

February 5, 2003



DEBORAH JONES

SUPERVISORY PATENT EXAMINER